

Amendments to the Drawings:

The attached sheet of drawings includes changes to Figure 4. This sheet replaces the original sheet.

Attachment

Remarks/Arguments:

Claims 1-30 are pending. Claims 1, 3, 20, 22-24, 26-28 and 30 are withdrawn by the Examiner and claims 2, 21, 25 and 29 stand rejected. In this response, applicant cancels claims 1, 3-20, 22-24 and 26-30, amends claims 2 and 21 and adds new claims 31-40. These claims do not introduce new matter.

Applicant wishes to thank the Examiner for the courtesy extended to applicant's representative during the telephone interview of November 16, 2009. During the interview the rejections of the claims in view of Leo, Zarth and Kono were discussed. Although no agreement was reached, it was agreed that certain features of applicant's elected species appear to distinguish over the prior art of record. The amended claims included herein incorporate those features.

Objections to the Drawings

The Office Action sets forth at page 3 that "The drawings are objected to because the lead line from reference character 21 points to the shank or nipple, and not the hole in the rim as described in the specification." Applicant understands from a subsequent conversation with the Examiner that this objection relates to Fig. 4. Attached hereto is a corrected Figure 4 in which the lead line for character 21 points to the hole in the rim. Applicant respectfully requests therefore that the objection be withdrawn.

Rejections Under 35 U.S.C. § 102 and 35 U.S.C. § 103

The Office Action sets forth at page 4 "Claims 2 and 25 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Leo et al (U.S. Patent Application Publication 2002/0060494 ...)." Claims 2, 21 and 25 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Zarth in view of Kono et al. and claim 29 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Leo et al. in view of Chiang et al. The rejection of claim 29 is obviated by its cancellation.

Applicant respectfully submits that these rejections are overcome by the amendments to the claims and the reasons set forth below.

Applicant's invention as recited in claim 1 includes features not disclosed or suggested by Leo, namely:

... an axial bidirectional locking means formed on a portion of

each of said respective plurality of nipples, said axial bidirectional locking means comprising a shoulder at one end of the shank of the nipple and also an external thread on the shank of the nipple which engages with a female thread disposed in a nut adjacent an outside portion of the rim to hold said nipple on the rim with said shoulder abutting against said rim...

... a resilient seal fitted onto the shank of the nipple close to said shoulder...

... a seating coaxial with the hole and adapted for fitting said seal is formed as a counter bore in the hole in the rim, said seating having a substantially cylindrical wall and forming an abutment for said shoulder...

... each nipple is disposed in the respective hole in the rim and retained in said hole by a respective one of said axial bidirectional locking means so as to be substantially gastight in the rim. (Emphasis Added)

Leo is relied upon as "[disclosing] a rim and spoke connection for a wheel comprising a rim having holes; nipples 20 having a head portion which is seated in rim cups 13 and a body 24 which extends through the holes ... A sealing ring 30 produces a gas-tight fit between the nipple and the rim. The head 25 or the threads 29 create an axial bidirectional locking means such that when the nipple is turned the spoke is drawn into the threaded opening in the nipple and locking the nipple in place on the rim." Although applicant respectfully disagrees with the overly broad interpretation of Leo, applicant has amended claim 2 in order to expedite prosecution. Leo fails to disclose or suggest, however, that the axial bidirectional locking means comprises a shoulder at one end of the shank of the nipple and also an external thread on the shank of the nipple which engages with a female thread disposed in a nut adjacent an outside portion of the rim to hold the nipple on the rim with the shoulder abutting against the rim, a seating coaxial with the hole and adapted for fitting the seal is formed as a counter bore in the hole in the rim, the seating having a substantially cylindrical wall and forming an abutment for the shoulder, and that each nipple is disposed in the respective hole in the rim and retained in the hole by a respective one of the axial bidirectional locking means so as to be substantially gastight in the rim.

In contrast, applicant's invention as recited in amended claim 1, requires axial bidirectional locking means comprising a shoulder at one end of the shank of the

nipple and also an external thread on the shank of the nipple which engages with a female thread disposed in a nut adjacent an outside portion of the rim to hold the nipple on the rim with the shoulder abutting against the rim, a seating coaxial with the hole and adapted for fitting the seal is formed as a counter bore in the hole in the rim, the seating having a substantially cylindrical wall and forming an abutment for the shoulder, and that each nipple is disposed in the respective hole in the rim and retained in the hole by a respective one of the axial bidirectional locking means so as to be substantially gastight in the rim.

It is because applicant's claimed invention includes axial bidirectional locking means comprising a shoulder at one end of the shank of the nipple and also an external thread on the shank of the nipple which engages with a female thread disposed in a nut adjacent an outside portion of the rim to hold the nipple on the rim with the shoulder abutting against the rim, a seating coaxial with the hole and adapted for fitting the seal is formed as a counter bore in the hole in the rim, the seating having a substantially cylindrical wall and forming an abutment for the shoulder, and that each nipple is disposed in the respective hole in the rim and retained in the hole by a respective one of the axial bidirectional locking means so as to be substantially gastight in the rim, that the following advantages are achieved. The advantages being that axial displacement of the nipple and the spoke due to elastic deformation of the rim during use will not effect the pressure within the rim due to the axial bidirectional locking means and coaxial seating. The prior art does not achieve this advantage because the prior art does not include axial bidirectional locking means comprising a shoulder at one end of the shank of the nipple and also an external thread on the shank of the nipple which engages with a female thread disposed in a nut adjacent an outside portion of the rim to hold the nipple on the rim with the shoulder abutting against the rim, a seating coaxial with the hole and adapted for fitting the seal is formed as a counter bore in the hole in the rim, the seating having a substantially cylindrical wall and forming an abutment for the shoulder, and that each nipple is disposed in the respective hole in the rim and retained in the hole by a respective one of the axial bidirectional locking means so as to be substantially gastight in the rim.

Because Leo fails to disclose each and every feature of applicant's claimed invention, applicant respectfully requests that the rejection of claim 2 as being

anticipated by Leo be withdrawn and the claim allowed.

Claim 25 depends on claim 2 and, thus, is likewise not subject to rejection for at least the reasons set forth above with respect to claim 2.

Zarth is relied upon as "[disclosing a] wheel assembly comprising a rim 13 and a plurality of spokes 16 ... nipples 27 having a head or shoulder portion abutting the rim ... nipples or seats 30, and a shank having external threads 28 ... the nipples are received in lock nuts 29 which include female threads to engage the threads 28 on the shanks." The Office readily admits, however, that Zarth does not disclose a gas-tight fit between the nipple and the rim. Kono is relied upon as "[teaching] a rim and spoke connection in which a sealing element is disposed between the rim and the nipple on the end of the spoke."

Both Zarth and Kono fail to disclose or suggest in combination, however, axial bidirectional locking means comprising a shoulder at one end of the shank of the nipple and also an external thread on the shank of the nipple which engages with a female thread disposed in a nut adjacent an outside portion of the rim to hold the nipple on the rim with the shoulder abutting against the rim, a seating coaxial with the hole and adapted for fitting the seal is formed as a counter bore in the hole in the rim, the seating having a substantially cylindrical wall and forming an abutment for the shoulder, and that each nipple is disposed in the respective hole in the rim and retained in the hole by a respective one of the axial bidirectional locking means so as to be substantially gastight in the rim.

Because the combination of Zarth and Kono fail to disclose each and every feature of applicant's claimed invention, applicant respectfully requests that the rejection of claim 2 as being unpatentable over Zarth in view of Kono be withdrawn and the claim allowed.

Claims 21 and 25 depend upon allowable claim 2 and, thus, are not subject to rejection for at least the reasons set forth above with respect to claim 2.

Newly added claims 31-39 depend upon allowable claim 1 and, thus, are allowable for at least the reasons set forth above with respect to claim 2.

Newly added independent claim 40 includes features which are neither disclosed or suggested by the prior art of record, namely:

... a rim having a plurality of holes ...

... a respective plurality of nipples, said nipples comprising a threaded stem screwed into and retained in a respective threaded hole made in the end of the spoke facing them ...

... an axial bidirectional locking means formed on a portion of each of said respective plurality of nipples, said axial bidirectional locking means comprising a shoulder at one end of the shank of the nipple and also a thread on the shank of the nipple which engages with a corresponding thread disposed adjacent an outside portion of the rim to hold said nipple on the rim with said shoulder abutting against said rim...

... a seal fitted onto the shank of the nipple close to said shoulder ...

... a seating coaxial with the hole and adapted for fitting said seal is formed as a counter bore in the hole in the rim, said seating having a substantially cylindrical wall and forming an abutment for said shoulder ...

... each nipple is disposed in the respective hole in the rim and retained in said hole by a respective one of said axial bidirectional locking means so as to be substantially gastight in the rim ...

... said nipples comprise a threaded stem screwed into and retained in a respective threaded hole made in the end of the spoke facing them. (Emphasis Added)

According to claim 40, axial bidirectional locking means comprising a shoulder at one end of the shank of the nipple and also a thread on the shank with a nipple engages with the corresponding thread disposed adjacent an outside portion of the rim to hold the nipple on the rim with the shoulder abutting against the rim, a seating is coaxial with the hole and adapted for fitting the seal is formed as a counter bore in the hole in the rim and the nipples comprise a threaded stem screwed into and retained in a respective threaded hole made in the end of the spoke facing them.

None of the prior art of record disclose or suggest these features. Accordingly, applicant submits that claim 40 is patentable over the prior art of record. Applicant respectfully requests, therefore, that claim 40 be entered and allowed.

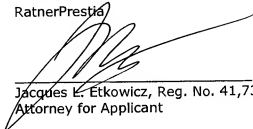
Claim 41 depends upon claim 40 and, thus, is likewise allowable for at least the reasons set forth above with respect to claim 40.

In view of the amendments and remarks set forth above, applicant submits

that the above-identified application is in condition for allowance which action is respectfully requested.

Respectfully submitted,

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Attachment: Figures 3, 4, 5 (1 sheet)

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